

(No Model.)

2 Sheets—Sheet 1.

E. W. WOLFE.

MECHANISM FOR FACILITATING THE INTRODUCTION OF TUBES INTO
FURNACES.

No. 267,633.

Patented Nov. 14, 1882.

FIG. 1.

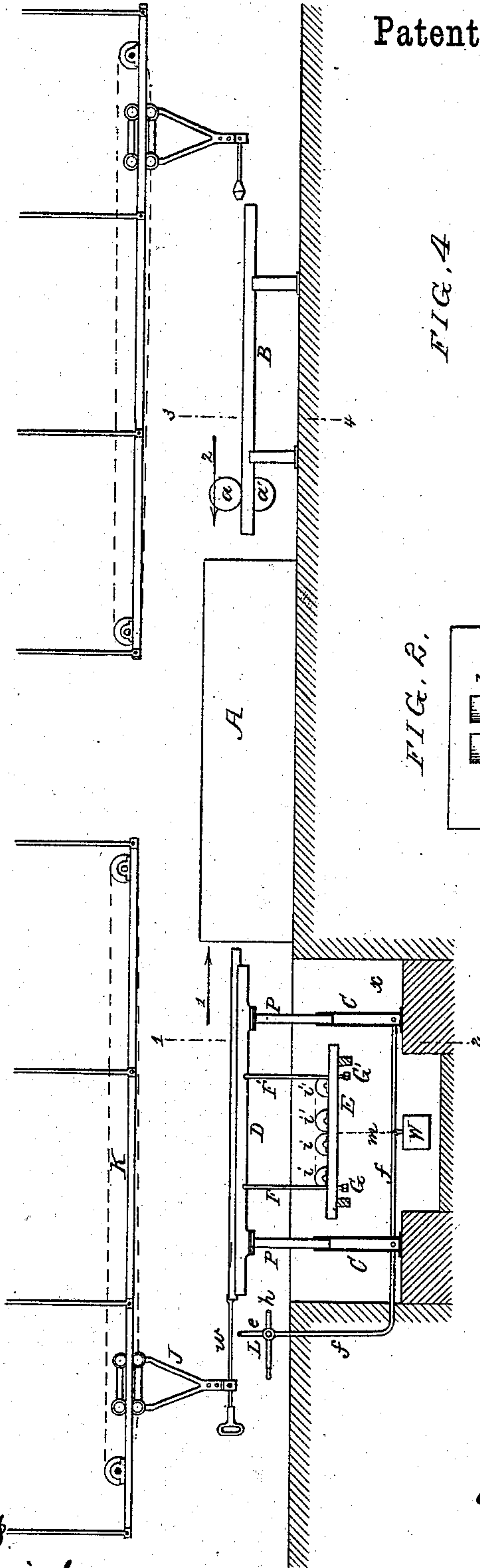


FIG. 2.

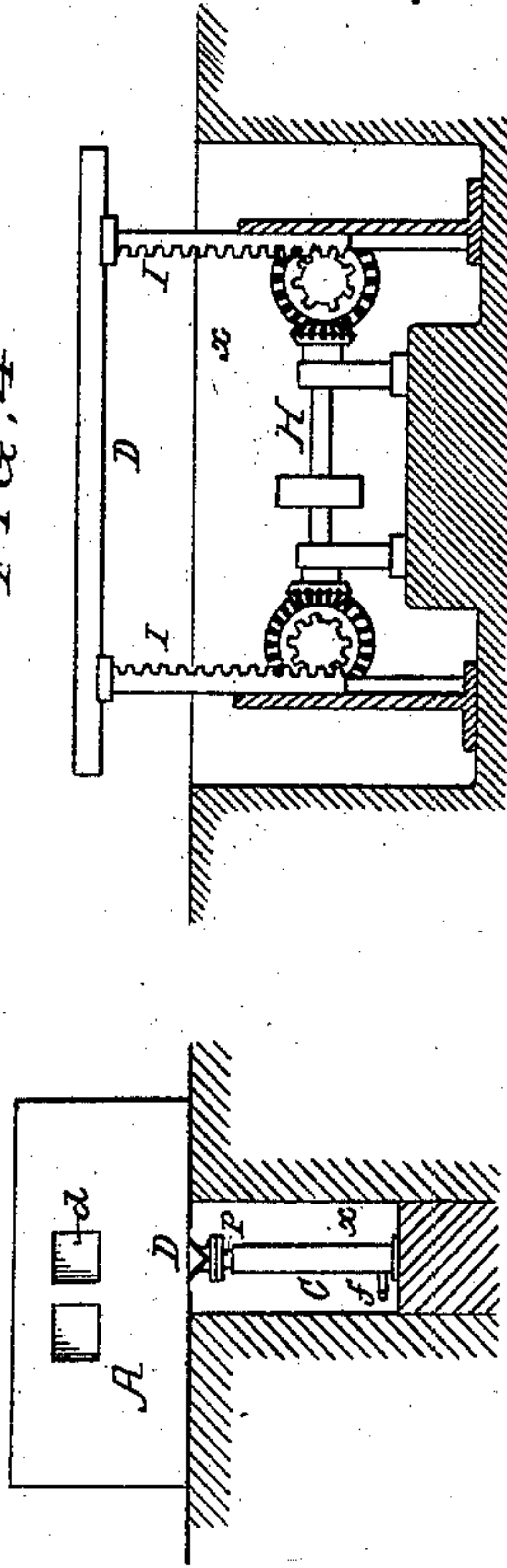
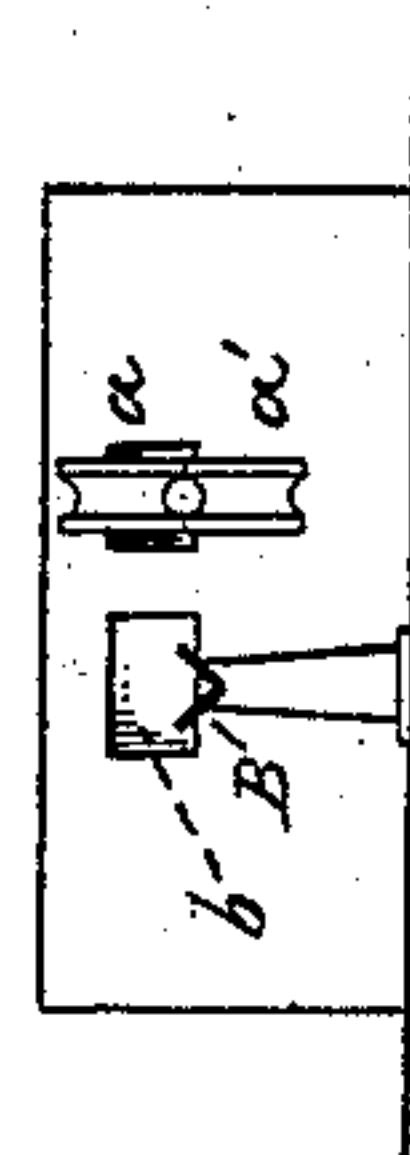


FIG. 3.



Witnesses,
Harry Drury
Harry Smith

Inventor.
Edward W. Wolfe
by his attorneys
Howson and Fox

(No Model.)

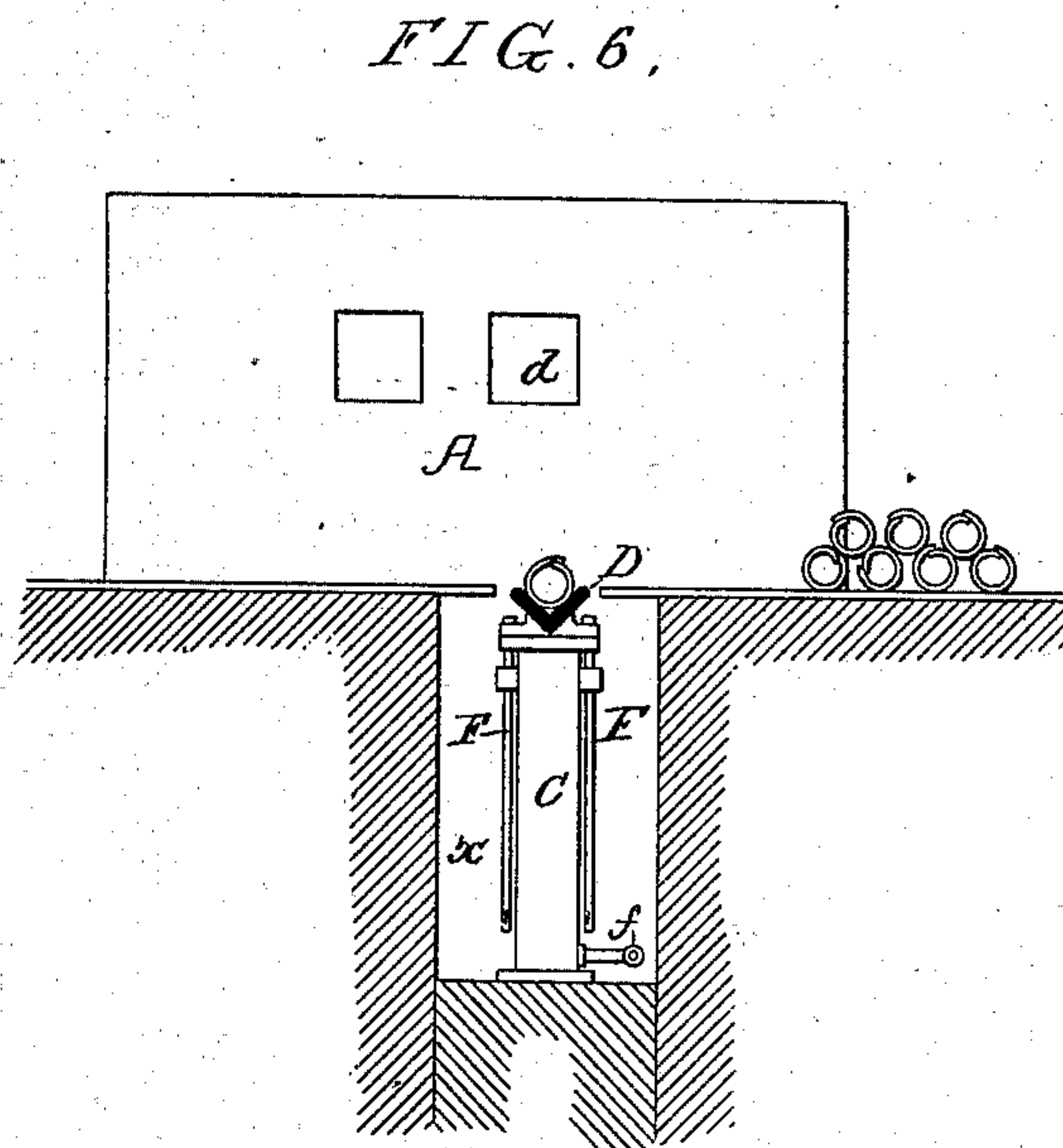
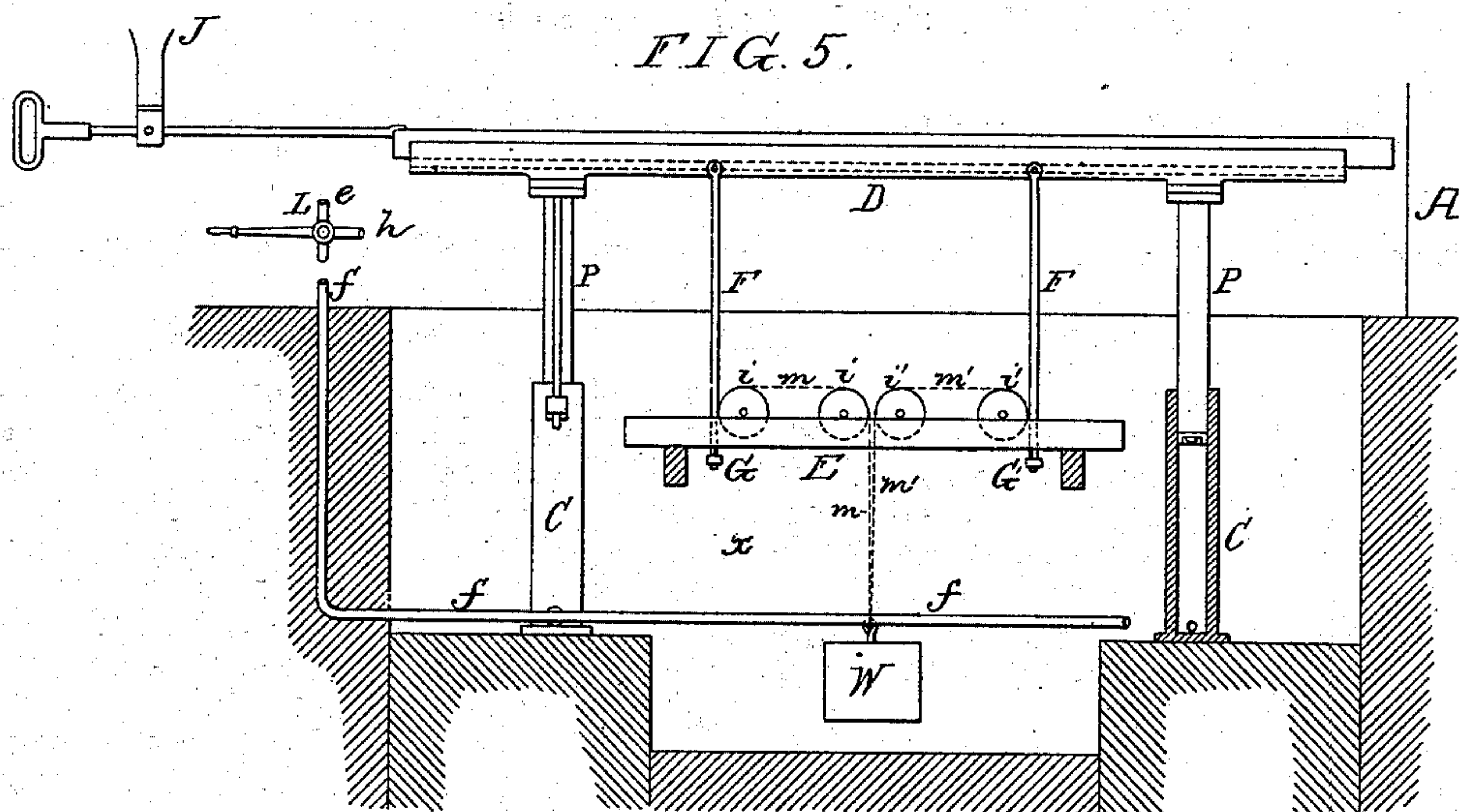
2 Sheets—Sheet 2.

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Inventor:
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By his Attorneys,
Howe and Sons

UNITED STATES PATENT OFFICE.

EDWARD W. WOLFE, OF READING, PENNSYLVANIA, ASSIGNOR TO THE
READING IRON WORKS, OF SAME PLACE.

MECHANISM FOR FACILITATING THE INTRODUCTION OF TUBES INTO FURNACES.

SPECIFICATION forming part of Letters Patent No. 267,633, dated November 14, 1882.

Application filed June 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. WOLFE, a citizen of the United States, residing in Reading, Berks county, Pennsylvania, have invented certain Improvements in Mechanism for Facilitating the Introduction of Tubes into Furnaces, of which the following is a specification.

My invention consists mainly of the combination of a tube-heating furnace with a receiver or trough, and with mechanism by which the said trough can be lowered to receive a bent skelp from a pile on the floor, and raised to a height which will permit the pushing of the skelp or tube directly into the furnace.

In the accompanying drawings, Figure 1, Sheet 1, is a side view, partly in section, illustrating the application of my invention to a tube-furnace; Fig. 2, a section on the line 1 2, looking in the direction of the arrow 1; Fig. 3, a section on the line 3 4, looking in the direction of the arrow 2; Fig. 4, a modification; and Figs. 5 and 6, Sheet 2, vertical and transverse sections, drawn to an enlarged scale, of parts of Fig. 1.

Referring to Sheet 1, A is an ordinary tube-heating furnace, at the front end of which are the usual tube-rolls, *a a'*, and on one side of these rolls is a fixed trough, B, directly opposite an opening, *b*, Fig. 3, in the front end of the furnace, as described in a separate application which I have made for a patent. At the opposite or rear end of the furnace, Fig. 2, there is a trough, D, into which tube after tube is placed prior to being pushed into the furnace through an opening, *d*. My invention relates more especially to this trough, which can be lowered to the floor, so that a tube can be easily rolled into it and elevated so that the tube which it has received shall be directly opposite to the opening *d*.

Different kinds of well-known raising and lowering mechanism may be used in connection with the trough. For instance, there may be in the pit *x* below the trough a shaft, H, with suitable driving and reversing appliances, and this shaft may be geared, through the medium of suitable bevel wheels and pinions, into guided-racks I, attached to and supporting the trough. (See Fig. 4.) I prefer, however,

to combine hydraulic hoisting and lowering mechanism with the trough, in the manner which I will now proceed to describe, reference being had to Figs. 5 and 6, Sheet 2.

Two cylinders, C C, are secured to suitable foundations in the bottom of the pit *x*, and the trough is secured to the upper ends of plungers P P, adapted one to each cylinder. A pipe, *e*, communicates with a pump or with a supply of water under pressure, which, by one adjustment of the plug of an ordinary three-way cock, L, may be directed through a pipe, *f*, to the cylinders beneath the plungers when the trough has to be raised. By another adjustment of the cock water from the cylinders may be directed through the same pipe, *f*, to the waste-pipe *h*, when the trough has to be lowered, a third adjustment of the cock closing both the waste-pipe and pipe *f* when the trough has to be stationary.

In order that both plungers may operate simultaneously, I secure within the pit a frame, E, to which are journaled two pairs of grooved pulleys, *i i* and *i' i'*, and two pairs, F F', of rods connected at their upper ends to the trough D, the rods of one pair, F, being secured at their lower ends to a cross-bar, G, and the rods of the other pair, F', to another cross-bar, G'. There are two chains or wire ropes, one, *m*, attached to the cross-bar G, and passing over the pulleys *i i* to a weight, W, the other chain or rope, *m'*, being attached to the cross-bar G', and passing over the pulleys *i' i'* to the same weight, the tendency of which is to maintain the trough in a horizontal position, and counteract any inequality in the action of the plungers.

In connection with mechanism to raise and lower the trough, I propose to use a power-traversed carriage, J, adapted to suspended rails K, and constructed for attachment to the push-rod *w*, the same kind of traversing carriage being used for returning to the furnace a tube which has passed through the rolls. This mechanism, however, forms the subject of a separate application for a patent, and therefore need not be described here.

I claim as my invention—

1. The combination, with a tube-heating fur-

nace, of a trough or receiver for a tube, mechanism below the trough for raising and lowering the same, and mechanism, substantially as described, for pushing the tube from the trough
5 into the furnace, as set forth.

2. The combination of the trough, plungers, and hydraulic cylinders with two pairs, F F', of rods, two chains or wire ropes, one connected to each pair of rods, pulleys over which
10 the ropes pass, and a weight, W, to which both

ropes are attached, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ED. W. WOLFE.

Witnesses:

HARRY DRURY,
HARRY SMITH.